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Use of metal ions for the estimation of the efficiency of antibody-antigen interactions

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Abstract

The applicability of Co(II), Ni(II), Fe(III), and Cr(III) ion labels to the immunochemical determination of ribonuclease, Candida albicans, Trichophyton rubrum, and Phoma betae antigens was studied. The catalytic waves of hydrogen evolution, which occur in transition metal solutions in the presence of protein compounds, were used as analytical signals. The maximum catalytic effect depends on the pH, buffer capacity, and nature of buffer solution and on the nature of antigen to be determined. A new procedure was proposed for the immunochemical determination of the ribonuclease antigen using Co(II) ions as a label. The conditions of the formation and degradation of the antibody-antigen immune complex were found. The linear analytical range for the ribonuclease antigen was 0.005-1.0 mg/mL.